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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	Bookbinder, Dana C et al.	
Serial No:	09/941383	Examiner: Hoffman, John M
Filing Date:	08/28/2001	Group Art Unit: 1731
Title:	FURNACE ASSEMBLY FOR HEATING AN OPTICAL WAVEGUIDE PREFORM	

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AMENDED BRIEF ON APPEAL

This Brief supports the appeal to the Board of Patent Appeals and Interferences from the final rejection dated January 19, 2005, in the application listed above. Appellant filed the Notice of Appeal on May 4, 2005. Appellant now submits this Amended Brief in response to the Examiner's Notification of Non-Compliant Appeal Brief as required by 37 C.F.R. § 41.37.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Corning Incorporated.

II. RELATED APPEALS AND INTERFERENCES

With respect to related appeals, interferences, or judicial proceedings that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal, there are no such appeals, interferences, or judicial proceedings.

III. STATUS OF CLAIMS

On May 4, 2005 appellant appealed from the final rejections of claims 1-12, 38-43, 47, and 48, which were rejected in the final Office Action dated January 19, 2005. Those are the pending claims that are the subject of this Appeal and are set forth in the attached Appendix. Claims 13-26, 29-37, and 44-46 are withdrawn and claims 27, 28, and 43 are canceled.

IV. STATUS OF AMENDMENTS

There are no amendments that have not been entered by the Examiner. The last amendment to the claims was made in the Amendment and Response which was filed on December 21, 2004.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 relates to a furnace assembly for heating an optical waveguide preform, the furnace assembly comprising a furnace including:

a muffle tube 110 defining a furnace passage 111, the furnace passage 111 having a length extending from a first end to a second end;

a top plate 120 mounted and resting on a terminal end of the muffle tube 110 at the second end and an central opening 122 defined in the top plate 120, said top plate 120 including a lower surface in contact with the terminal end and an upper surface opposite the lower surface; and

a heating device 118 operative to heat the furnace passage 111;

a process gas supply 150 providing a process gas to the furnace passage 111;

a handle 130 disposed in the furnace passage 111, said handle including a coupling portion 134 which is adapted to hold the waveguide preform 5 and the handle 130 extends through the exit opening;

a flow shield 160 positioned between the first and second ends and extending across the furnace passage 111 between the handle 130 and the muffle tube 110, the flow shield arranged and configured to restrict flow of the process gas from the first end to the second end of the furnace passage; and

a washer 174 mounted about the handle, contacting the upper surface of the top plate 120 and covering a portion of the central opening 122. (See Fig. 1 and page 4, line 25 through page 6, line 25.).

Claim 41 relates to a furnace assembly adapted to heat an optical fiber preform 5, comprising:

a muffle 110 tube defining a furnace passage 111, the passage including a length extending from an inlet opening 112 at a first end to an outlet opening 114 at a second end, and a flange 116 on the second end,

a top plate 120 mounted on a top of the muffle tube 110 and covering the second end and the outlet opening 114 and including a central opening 122 therein, said top plate including a lower surface in contact with the flange and an upper surface opposed thereto,

a process gas supply 150 adapted to supply a process gas in the passage directed from the first end to the second end,

a handle 130 adapted to suspend the preform 5 within the passage,

a flow shield 160 positioned in the passage between the preform 5 and the second end and extending between the handle 130 and the muffle tube 110, wherein the flow shield 160 is configured to enable restriction of flow of the process gas, and

a washer 174 mounted about the handle 130 and in contact with the upper surface of the top plate 120 and covering a portion of the central opening 122 (Fig. 1 and page 4, line 25 through page 6, line 25).

Claim 42 relates to a furnace assembly adapted to heat an optical fiber preform, said assembly comprising:

a muffle tube 110 including a tubular body and a passage 111;

a top plate 120 having a lower surface mounted in contact with an end of the muffle tube 110 and an upper surface opposite the lower surface, the top plate 120 extending radially inward from the tubular body 110 and including a central opening 122 therein;

a gas supply 150for supplying process gas to the passage;

a handle 130 traversing the central opening 122 in the top plate 120 and adapted to suspend the preform in the passage from a coupling portion 134 formed on a lower end of the handle 130;

a flow shield 160 positioned in the passage between the coupling portion 134 and the top plate 120, wherein the flow shield 160 is configured such that a radial peripheral edge of

the flow shield 160 and a cylindrical inside surface of the muffle tube 110 form a marginal gap having a width of between 2.5 and 25 mm to enable restriction of the gas; and

a washer 174 positioned over the central opening 122 and in contact with the upper surface of the top plate 120, the handle 130 extending through the washer 174 wherein the washer 174 inhibits air entry into the passage (see Fig. 1 and page 4, line 25 through page 6, line 25).

Claim 47 relates to a furnace assembly for heating an optical waveguide preform, the furnace assembly comprising:

a furnace 100 including:

a muffle tube 110 defining a furnace passage 111, the furnace passage 111 having a length extending from a first end to a second end;

a top plate 120 mounted on a terminal end of the muffle tube 110 at the second end, said top plate 120 including a lower surface, an upper surface opposed to the first surface, and a central opening 122 defined in the top plate 120; and

a heating device 118 operative to heat the furnace passage;

a process gas supply 150 providing a process gas to the furnace passage 111;

a handle 130 disposed in the furnace passage 111, said handle 130 including a coupling portion 134 which is adapted to hold the waveguide preform 5 and the handle extends through the central opening 122;

a flow shield 160 positioned between the first and second ends and extending across the furnace passage 111 between the handle 130 and the muffle tube 110, the flow shield 160 arranged and configured to restrict flow of the process gas from the first end to the second end of the furnace passage 111; and

a plurality of washers 172, 174 mounted above the top plate 120 and about the handle 130 and covering a portion of the exit opening wherein at least one of the washers 174 is in contact with the top plate 120 and at least two of the washers are in contact with each other. (See Fig. 1 and page 4, line 25 through page 6, line 25.)

Claim 48 relates to a furnace assembly, comprising:

a furnace 100 including:

a muffle tube 110 defining a furnace passage 111, the furnace passage having a length extending from a first end to a second end;

a top plate 120 mounted on top of the muffle tube 110 at the second end, the top plate

having a central opening 122 formed therein; and

a heating device 118 operative to heat the furnace passage 111;

a process gas supply 150 providing a process gas to the furnace passage 111;

a handle 130 disposed in the furnace passage 111 and extending through the central opening 122, the handle 130 including a coupling portion 134;

a flow shield 160 mounted on the handle 130 and positioned between the first and second ends and extending across the furnace passage 111 between the handle 130 and the muffle tube 110, the flow shield 160 arranged and configured to restrict flow of the process gas from the first end to the second end of the furnace passage;

a cylindrical spacer 162 mounted about the handle 130 and spacing the flow shield 160 from the coupling portion 134; and

a plurality of washers 172, 174 mounted above the top plate 120 and about the handle 130 and at least one washer 174 is in contact with the top plate 120 and is covering a portion of the central opening 122 and at least two of the plurality of washers 172, 174 are in contact with each other. (See Fig. 1 and page 4, line 25 through page 6, line 25.)

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The claims are currently rejected by the Patent Office as follows:

1) Claims 1-12, 38-43, and 47-48 are rejected under 35 U.S.C. §103(a) as being unpatentable over JP 2000-44269 in view of Drouart 5931984, Kaiser 4030901, Ryoji JP 02212325, Gilbreath 6447017, Haney 4347069, and Collins 5408865.

VII. ARGUMENT

The rejection of claims 1-12, 38-43, and 47-48 under 35 U.S.C. §103(a) as being unpatentable over JP 2000-44269 in view of Drouart 5931984, Kaiser 4030901, Ryoji JP 02212325, Gilbreath 6447017, Haney 4347069, and Collins 5408865 is improper

A proper *prima facie* showing of obviousness requires the examiner to satisfy three requirements. First, the prior art relied upon, coupled with knowledge generally available to one of ordinary skill in the art, must contain some suggestion which would have motivated the skilled artisan to combine references. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d

1596, 1598 (Fed. Cir. 1988). Second, the examiner must show that, at the time the invention was made, the proposed modification had a reasonable expectation of success. See Amgen v. Chugai Pharm. Co., 927 F.2d 1200, 1209, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991). Finally, the combination of references must teach or suggest each and every limitation of the claimed invention. See In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Claims 1-12, 38-43, and 47-48 are rejected under 35 U.S.C. §103(a) as being unpatentable over JP 2000-44269 in view of Drouart 5931984, Kaiser 4030901, Ryoji JP 02212325, Gilbreath 6447017, Haney 4347069, and Collins 5408865. According to the Examiner in the Office Action dated June 14, 2004, "since there is no translation [of JP 2000-44269] available US Patent 6543257 is relied upon to show what the Japanese reference discloses."

In the Final Rejection dated January 19, 2005, the Examiner instructed applicants to "see how the art was previously applied in the rejection of 9/20/2004". As far as applicants are aware there is no rejection dated 9/20/2004, applicants assume the Examiner is referring to the Office Action dated 9/23/2004.

According to the Examiner in the Office Action mailed on 9/23/2004, "Gilbreath, Haney and Collins are cited as evidence that o-rings and washers are equivalent sealing devices." Applicants respectfully disagree that these three references indicate that o-rings and washers are "equivalent".

Contrary to the Examiner's assertions, none of the references cited by the Examiner expressly indicate that o-rings and/or washers are equivalents. Simply because two items are mentioned in the same sentence does not mean they are "equivalent".

As further evidence that o-rings are not equivalent to washers, applicants submitted definitions of o-ring and washer from Websters Third New International Dictionary (copyright 1993). O-ring is defined as "a flat ring of synthetic rubber used as a gasket in sealing a joint against high pressures." Washer is defined as "any of various flat thin rings or perforated plates (as of metal or leather) used in joints for assemblies to ensure tightness, prevent leakage, or relieve friction." The definition of o-ring is consistent with the use of the o-ring in JP2000-44269, i.e., as a sealing gasket. Clearly, a washer is not the equivalent of an o-ring, as a washer does not have to seal against high pressure. According to the Examiner in the Advisory Action dated March 31st, 2005, "Whereas applicant argues that merely mentioning the features in the same sentence does not constitute equivalence, such is not very

relevant because such is not the basis for the Office's conclusion. The Office considered what the sentences actually teaches about o-rings, washers and equivalence. Applicants arguments fail to addressed the actual teachings of the prior art – and what they suggest to one of ordinary skill. Examiner has considered the teachings once again and remains convinced they teach that o-rings and washers are equivalents."

Applicants have carefully considered these new assertions by the Patent Office. The Patent Office seems to imply that each of the references teach that o-rings and washers are equivalent. Again, applicants have gone back and reviewed each of these references individually and none of them seem to say anything of the sort. Applicants have also reviewed the comments by the Examiner with respect to these references in the September 23, 2004 Office Action. In that Office Action the Examiner merely indicates that these references are cited as evidence that o-rings and washers are equivalent sealing devices, with no explanation of why the Examiner believes this is evidence of that fact. While it may be true that there are applications where either an o-ring or a washer will suffice, clearly this is not always the case (and thus they are not equivalents), and it is certainly not the case with applicants claimed invention.

According to the Examiner in the non-final rejection dated 9/23/2004, "the invention as claimed is known as per Koaizawa Figure 1, in columns 3-4. As described in US Patent No. 6543257 which is the US equivalent to JP2000-44269, the apparatus in Fig. 1 of JP2000-44269 discloses an o-ring rather than the claimed washer. In view of the six secondary references, it would have been obvious to place a sealing washer over the Koaizawa (JP2000-44269) plate since such is a known equivalent to an o-ring seal." Thus, the Examiner, in his rejection of all of the claims of record, appears to utilize Fig. 1 and suggests that there is motivation in JP2000-44269and the other prior art references to modify Fig. 1 of JP2000-44269as defined by applicants claims. Applicants respectfully disagree.

First, as explained above, washers are not the equivalent of an o-ring seal. There is no teaching in any of the references cited that would motivate one of skill in the art to substitute a washer over the top plate of JP2000-446529 in replacement for the o-ring seal which is located in the shaft passage of JP2000-44269. Further, applicants submit that, even if the references were combinable as the Examiner suggests, such a combination would not result in applicants' claimed invention. In particular, the passage from US Patent No. 6543257 which was referred to by the Examiner himself (column 4, line 50-62 of US Patent No. 6543257)

indicates that "It has been proposed to perform the sealing by providing a seal member made of an o-ring in the elevating shaft passage of the upper lid 31 under which the elevating shaft 41 passes." Note first that the language in this passage is consistent with the definition of O-ring, that is, the purpose of the ring is to seal against high pressures. One would therefore not be motivated to substitute the washer for the o-ring, because the o-ring seals against high pressures, while washers do not. Also, if one were to substitute a washer for the o-ring in the JP2000-44269 Figure 1 apparatus, that washer would be disposed within the shaft passage of the lid 31. However, rather than merely substituting a washer in the same location as the o-ring of JP2000-44269, the Examiner appears to further suggest that it would have been obvious to place a sealing washer, not in the shaft passage of the upper lid as JP2000-44269 actually indicates, but over the JP2000-44269 plate. There is clearly no suggestion of placing either a washer or an o-ring in this location in JP2000-44269.

Applicants submit that there is no motivation to supply a washer over the JP2000-44269 plate instead of the O-ring which is employed. Applicants' claim requires a washer mounted about the handle, contacting the upper surface of the top plate and covering a portion of the central opening. Even if, assuming arguendo, one would consider using a washer in place of the o-ring utilized by JP2000-44269, substitution of that washer in place of the o-ring in JP2000-44269 would not result in applicants' invention.

In addition, it should be recognized that the intended function (reliable sealing) of JP2000-44269 would be destroyed if the modification proposed by the Examiner is adapted. The Examiner indicated that applicants did not provide evidence as to how the intended function of JP2000-44269 would be destroyed. Repeatedly throughout JP2000-44269, upper lid is described as being reliably sealed (see, for example, column 7, lines 27-30 and 44-53, column 8, lines 25-33, column 16, lines 20-25, column 18, lines 40-58, and column 27, lines 43-50 of US Patent No. 6543257). That is why in JP2000-44269 the applicants chose an o-ring, i.e. to achieve a reliable seal (again, see the definition of o-ring above). Ryoji, on the other hand, is a leaky system allowing some exhaust gas to exit around the washer.

The Examiner indicates that feature 5 in JP2000-44269 is a flow shield. Applicants respectfully disagree that feature 5 in JP2000-44269 can be construed to be a flow shield. A flow shield as that term is employed in applicants specification is a device which is arranged and configured to restrict flow of the process gas from the first end to the second end of the furnace passage (see for example, page 2, lines 10-11 of US Patent No. 6543257). The

perform holder 5 in JP2000-44269 clearly does not extend across the furnace enough to restrict flow of the process gas, and in fact only serves to hold the optical fiber perform in place.

The Examiner states that, alternatively, "JP2000-44269 teaches to have the same furnace as figure 1 with the shield of figures 3-4. See Col 19, line 28. In other words: altering the known figure 1 apparatus to include the shield 28 of figures 3-4." Applicants disagree that Col 19 line 28 suggests anything of the sort. In fact, what col 19, lines 25-30 actually indicates is that in Figs. 3 and 4, parts given the same reference numerals as the apparatus illustrated in Fig. 1 and 2 are the same as or similar to the parts illustrated in Fig. 1 and 2. There is no shield 28 shown in Fig. 1, so there is no suggestion in this passage to use a shield 28 in the apparatus shown in Fig. 1. In other words, with respect to the shield 28 in Fig. 3, there is no similar part in Fig. 1, so the passage referred to by the Examiner is irrelevant, and does not teach or suggest as the Examiner indicates.

For all of the above reasons, it is submitted that claims 1, 41, 42, 47, and 48 are in condition for allowance.

With respect to claim 2, there is clearly no formation of an isolation chamber 102 between the perform holder 5 in Koaizama and the second end.

With respect to claim 3, there is clearly no mention or suggestion of maintaining a the gap between the peripheral edge and the muffle define a marginal gap between 2.5mm and 25mm. The Examiner indicates that "col. 24, lines 60-62 indicates that the means-cum-insulating means (of which 28 is one) is between 5-20 mm". However, as explained above, there is clearly no suggestion of using element 28 in the apparatus disclosed in Fig 1, as the Examiner proposes in his rejection.

There is no mention of suggestion in the prior art cited of having the flow shield have a thickness of greater than 6mm, as defined by claim 4.

With respect to claim 5, there is no mention or suggestion in any of the references cited of having the handle extend through the top plate and the flow shield disposed between the coupling portion and the top plate. In fact, the Examiner actually takes the position in his rejection that the coupling portion is the flow shield. Coupling portion is defined in applicants' specification as the part that is arranged and configured to hold and suspend the optical fiber preform (see for example page 5, lines 5-7 of applicants' specification). Clearly that would equate to feature 5 in JP2000-44269, as feature 5 clearly is configured to hold the

preform. This clearly demonstrates the problem with this rejection, that is, the flow shield obviously cannot be positioned between itself and something else. Clearly, the preform holder in JP2000-44269 is not a flow shield.

With respect to claim 7, the Examiner indicates that we should see Fig. 10, but he does not indicate why one should see Fig. 10. Applicants respectfully submit that nothing in Fig 10 would motivate one of skill in the art to modify Fig.1 of JP2000-44269 to include a spacer which separates the flow shield from the coupling portion. In fact, in the Examiner's rejection, what the Examiner refers to as a flow shield is in fact a coupling portion, not a flow shield. Likewise with respect to claim 8, which further indicates that the spacing distance should be at least 50 mm. Applicants submit that one cannot space the perform holder 5 in Fig. 1 50 mm from itself.

With respect to claim 9, the Examiner indicates "see column 22, lines 18-19". Again, this passage refers to insulating means 28 in Fig. 6, and as explained above there is no motivation to use insulating means 28 in the Fig. 1 embodiment. Nor is there any mention of combining the teachings of the Fig. 6 embodiment with that of the prior art Fig. 1 embodiment.

With respect to claims 39-40, the Examiner indicates to "see Figure 20". Applicants have seen Fig. 20, and submit that there is nothing in Fig. 20 that would suggest to one of skill in the art that Fig. 1 should be modified. Further, Fig. 20 lacks anything that could possibly be construed to be a top plate. Further, there does not appear to be either an o-ring or a top plate in Fig. 20.

For at least the reasons given above, Appellants assert that the Examiner has failed to make a *prima facie* case of obviousness, and that the Board should reverse the §103 rejection and find that claims 1-12, 38-43, and 47-48, are allowable over the prior art of record.

Conclusion

In conclusion, Appellants request a reversal of each of the grounds of rejection maintained by the Examiner and prompt allowance of the pending claims 1-12, 38-43, and 47-48.

Please charge the fees due under 37 C.F.R. § 1.17(c) to Deposit Account No. 03-3325. If there are any other fees due in connection with the filing of this Brief on Appeal, please charge the fees to our Deposit Account No. 03-3325. If a fee is required for an extension of

time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

Dated: September 30, 2005

By: 

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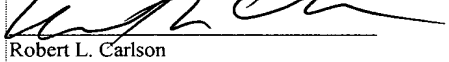

Robert L. Carlson

VIII. CLAIMS APPENDIX

The claims on appeal are as follows:

1. **(rejected)** A furnace assembly for heating an optical waveguide preform, the furnace assembly comprising:

a furnace including:

a muffle tube defining a furnace passage, the furnace passage having a length extending from a first end to a second end;

a top plate mounted and resting on a terminal end of the muffle tube at the second end and an central opening defined in the top plate, said top plate including a lower surface in contact with the terminal end and an upper surface opposite the lower surface; and

a heating device operative to heat the furnace passage;

a process gas supply providing a process gas to the furnace passage;

a handle disposed in the furnace passage, said handle including a coupling portion which is adapted to hold the waveguide preform and the handle extends through the exit opening;

a flow shield positioned between the first and second ends and extending across the furnace passage between the handle and the muffle tube, the flow shield arranged and configured to restrict flow of the process gas from the first end to the second end of the furnace passage; and

a washer mounted about the handle, contacting the upper surface of the top plate and covering a portion of the central opening.

2. **(rejected)** The furnace assembly of Claim 1 wherein the flow shield defines an isolation chamber between the flow shield and the second end.

3. **(rejected)** The furnace assembly of Claim 1 wherein the flow shield has a peripheral edge adjacent the muffle, and the peripheral edge and the muffle define a marginal gap therebetween having a width of between about 2.5 mm and 25 mm.

4. **(rejected)** The furnace assembly of Claim 1 wherein the flow shield has a thickness

greater than about 6 mm.

5. **(rejected)** The furnace assembly of Claim 1 wherein:
the handle extends through the top plate at the second end of the passage; and
the flow shield is disposed between the coupling portion and the top plate.

6. **(rejected)** The furnace assembly of Claim 1 wherein the flow shield is coupled to the handle.

7. **(rejected)** The furnace assembly of Claim 1 wherein the handle includes a spacer longitudinally separating the flow shield from the coupling portion.

8. **(rejected)** The furnace assembly of Claim 7 wherein the spacer separates the flow shield from the preform a distance of at least 50 mm.

9. **(rejected)** The furnace assembly of Claim 1 wherein the flow shield is formed of at least one material selected from the group consisting of fused silica, fused quartz, ceramic, silicon carbide, ceramic coated fused silica, and ceramic coated fused quartz, and combinations thereof.

10. **(rejected)** The furnace assembly of Claim 1 wherein the handle is formed of at least one material selected from the group consisting of fused silica, fused quartz, ceramic, ceramic coated fused silica, and ceramic coated fused quartz, and combinations thereof.

11. **(rejected)** The furnace assembly of Claim 1 wherein the furnace is a waveguide preform holding furnace.

12. **(rejected)** The furnace assembly of Claim 1 wherein the furnace is a waveguide preform consolidation furnace.

13. **(withdrawn)** The furnace assembly of Claim 1 further comprising a second flow shield extending across the furnace passage between the handle and the muffle, the first and

second flow shields being arranged and configured to restrict flow of the process gas from the first end to the second end, wherein the second flow shield is spaced apart from the first flow shield along the length of the furnace passage.

14. **(withdrawn)** The furnace assembly of Claim 13 including a spacer positioned between the first and second flow shields.

15. **(withdrawn)** The furnace assembly of Claim 1 further comprising a second flow shield extending across the furnace passage between the handle and the muffle, the first and second flow shields being arranged and configured to restrict flow of the process gas from the first end to the second end, wherein the second flow shield is located substantially immediately adjacent the first flow shield.

16. **(withdrawn)** The furnace assembly of Claim 1 wherein:
the furnace includes an end wall;
the flow shield is spaced apart from the end wall and connected thereto by at least one connecting member; and
the handle is free to move relative to the flow shield.

17. **(withdrawn)** The furnace assembly of Claim 1 including a longitudinally extending shield collar extending from the flow shield toward one of the first and second ends, the shield collar including an outer surface facing the muffle, wherein the outer surface and the muffle define a lengthwise restrictive flow passage therebetween.

18. **(withdrawn)** The furnace assembly of Claim 17 wherein the restrictive flow passage has a gap dimension between the outer face and the muffle of between about 2.5 and 25 mm.

19. **(withdrawn)** The furnace assembly of Claim 17 wherein the restrictive passage has a length of between about 25 and 250 mm.

20. **(withdrawn)** The furnace assembly of Claim 17 including a longitudinally extending second shield collar disposed within the first shield collar and including an inner surface

facing the handle, wherein the inner surface and the handle define a lengthwise second restrictive passage therebetween.

21. **(withdrawn)** The furnace assembly of Claim 20 wherein the second restrictive passage has a gap width between the inner surface and the handle of between about 1 and 20 mm.

22. **(withdrawn)** The furnace assembly of Claim 20 wherein the second restrictive passage has a length of between about 25 and 250 mm.

23. **(withdrawn)** The furnace assembly of Claim 20 wherein:
the furnace includes an end wall and an exit opening defined in the end wall;
the handle extends through the exit opening; and
the second shield collar extends from the end wall into the furnace passage and surrounds the exit opening.

24. **(withdrawn)** The furnace assembly of Claim 1 wherein:
the furnace includes an end wall and an exit opening defined in the end wall; and
the flow shield comprises a shield collar extending from the end wall into the furnace passage and surrounding the exit opening.

25. **(withdrawn)** The furnace assembly of Claim 24 wherein the shield collar forms a lengthwise restrictive flow passage with at least one of the muffle and the handle.

26. **(withdrawn)** The furnace assembly of Claim 25 wherein the handle extends through the exit opening and the shield collar and the muffle define a first lengthwise restrictive flow passage therebetween and the shield collar and the handle define a second lengthwise restrictive flow passage therebetween.

27. **(canceled)**

28. **(canceled)**

29. **(withdrawn)** The furnace assembly of Claim 1 including:
a supply of a second process gas; and
a gas port in fluid communication with the second process gas supply and positioned to direct the second process gas into the furnace passage adjacent a side of the flow shield opposite the preform.

30. **(withdrawn)** The furnace assembly of Claim 29 wherein the first and second process gases are the same.

31. **(withdrawn)** The furnace assembly of Claim 30 wherein the first and second process gas supplies are the same.

32. **(withdrawn)** The furnace assembly of Claim 29 wherein the second process gas is selected from the group consisting of Ar, He, and N_2, and mixtures thereof.

33. **(withdrawn)** The furnace assembly of Claim 29 wherein the gas port is formed in the handle, the handle further comprising a handle passage extending through the handle and fluidly connecting the second process gas supply and the gas port.

34. **(withdrawn)** The furnace assembly of Claim 33 further comprising a second flow shield extending across the furnace passage between the handle and the muffle, the first and second flow shields being arranged and configured to restrict flow of the first process gas from the first end to the second end, wherein:
the second flow shield is spaced apart from the first flow shield along the length of the furnace passage; and
the gas port is positioned between the first and second flow shields.

35. **(withdrawn)** The furnace assembly of Claim 1 including a processing gas port in fluid communication with the process gas supply and positioned to direct the process gas into the furnace passage adjacent a side of the flow shield closest to the preform.

36. **(withdrawn)** The furnace assembly of Claim 1 wherein the handle is free to move relative to the flow shield and the muffle includes a ledge adapted to support the flow shield.

37. **(withdrawn)** The furnace assembly of Claim 35 wherein the process gas is selected from the group consisting of Cl_2, SiF_4, CF_4, SF_6, NF_3, $GeCl_4$, $SiCl_4$, $POCl_3$, BCl_3, BF_3, PCl_3, C_2F_6, and CO, and mixtures thereof.

38. **(rejected)** The furnace assembly of Claim 1 wherein the handle is movable relative to the muffle and the flow shield is mounted on the handle for movement therewith.

39. **(rejected)** The furnace assembly of Claim 38 including a drive assembly operable to translate the handle and the flow shield relative to the muffle.

40. **(rejected)** The furnace assembly of Claim 38 including a drive assembly operable to rotate the handle and the flow shield relative to the muffle.

41. **(rejected)** A furnace assembly adapted to heat an optical fiber preform, comprising:

a muffle tube defining a furnace passage, the passage including a length extending from an inlet opening at a first end to an outlet opening at a second end, and a flange on the second end,

a top plate mounted on a top of the muffle tube and covering the second end and the outlet opening and including an central opening therein, said top plate including a lower surface in contact with the flange and an upper surface opposed thereto,

a process gas supply adapted to supply a process gas in the passage directed from the first end to the second end,

a handle adapted to suspend the preform within the passage,

a flow shield positioned in the passage between the preform and the second end and extending between the handle and the muffle tube, wherein the flow shield is configured to enable restriction of flow of the process gas, and

a washer mounted about the handle and in contact with the upper surface of the top plate and covering a portion of the central opening.

42. **(rejected)** A furnace assembly adapted to heat an optical fiber preform, said assembly comprising:

a muffle tube including a tubular body and a passage;

a top plate having a lower surface mounted in contact with an end of the muffle tube and an upper surface opposite the lower surface, the top plate extending radially inward from the tubular body and including a central opening therein;

a gas supply for supplying process gas to the passage;

a handle traversing the central opening in the top plate and adapted to suspend the preform in the passage from a coupling portion formed on a lower end of the handle; and

a flow shield positioned in the passage between the coupling portion and the top plate, wherein the flow shield is configured such that a radial peripheral edge of the flow shield and a cylindrical inside surface of the muffle tube form a marginal gap having a width of between 2.5 and 25 mm to enable restriction of the gas; and

a washer positioned over the central opening and in contact with the upper surface of the top plate, the handle extending through the washer wherein the washer inhibits air entry into the passage.

43. **(canceled)**

44. **(withdrawn)** A method of manufacturing an optical fiber preform, comprising the steps of:

flowing a process gas in a furnace passage of a muffle tube from a first end to a second end, the furnace passage having the optical fiber preform mounted therein, and

restricting flow of the process gas using a flow shield positioned in the passage between the preform and the second end and extending between a handle and the muffle tube.

45. **(withdrawn)** The method of Claim 44 wherein the process gas is flowed through the muffle tube at a rate of no more than 30 slpm.

46. **(withdrawn)** The method of Claim 44 wherein the process gas is flowed through the muffle tube at a rate of no more than 10 slpm.

47. **(rejected)** A furnace assembly for heating an optical waveguide preform, the furnace assembly comprising:

a furnace including:

a muffle tube defining a furnace passage, the furnace passage having a length extending from a first end to a second end;

a top plate mounted on a terminal end of the muffle tube at the second end, said top plate including a lower surface, an upper surface opposed to the first surface, and a central opening defined in the top plate; and

a heating device operative to heat the furnace passage;

a process gas supply providing a process gas to the furnace passage;

a handle disposed in the furnace passage, said handle including a coupling portion which is adapted to hold the waveguide preform and the handle extends through the central opening;

a flow shield positioned between the first and second ends and extending across the furnace passage between the handle and the muffle tube, the flow shield arranged and configured to restrict flow of the process gas from the first end to the second end of the furnace passage; and

a plurality of washers mounted above the top plate and about the handle and covering a portion of the exit opening wherein at least one of the washers is in contact with the top plate and at least two of the washers are in contact with each other.

48. **(rejected)** A furnace assembly, comprising:

a furnace including:

a muffle tube defining a furnace passage, the furnace passage having a length extending from a first end to a second end;

a top plate mounted on top of the muffle tube at the second end, the top plate having a central opening formed therein; and

a heating device operative to heat the furnace passage;

a process gas supply providing a process gas to the furnace passage;

a handle disposed in the furnace passage and extending through the central opening, the handle including a coupling portion;

a flow shield mounted on the handle and positioned between the first and second ends

and extending across the furnace passage between the handle and the muffle tube, the flow shield arranged and configured to restrict flow of the process gas from the first end to the second end of the furnace passage;

a cylindrical spacer mounted about the handle and spacing the flow shield from the coupling portion; and

a plurality of washers mounted above the top plate and about the handle and at least one washer is in contact with the top plate and is covering a portion of the central opening and at least two of the plurality of washers are in contact with each other.

IX. EVIDENCE APPENDIX

Definitions of o-ring and washer from Websters Third New International Dictionary (copyright 1993) were submitted with Applicant's amendment dated March 21, 2005. Evidence was entered by the Examiner on March 29, 2005, as stated on the Advisory Action mailed March 31, 2005.

X. RELATED PROCEEDINGS APPENDIX

None

Webster's Third New International Dictionary

OF THE ENGLISH LANGUAGE

UNABRIDGED

A GENUINE MERRIAM-WEBSTER

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tugged at the loose ends of his scarf —Howard Hunt) **d** : the dissipated current or force in the trail of an intellectual or social movement : ... hard to know how much ... is solid accomplishment th... last, and how much is the ~ of a wave of opinion —... Roeber) (traveled there in the ~ of the war —J.R.Walsh) **14 a** : the upper surface of a member or mate... when given a slope to shed water : WEATHERING **b** : a structure or receptacle shaped so as to receive and carry off water

³wash \"\ *adj* [*¹wash*] : capable of being washed without injury : WASHABLE ⟨~ fabrics⟩ ⟨a ~ dress⟩ ⟨~ goods⟩

⁴wash *adj* [perh. alter. (influenced by *²wash*) of *wearish*] *obs* : WASHY, WEAK ⟨their bodies of so weak and ~ a temper —Francis Beaumont & John Fletcher⟩

wa-sha \'wäshə\ *n, pl* **washa** *or* **washas** *usu cap* **1** : a Chitimachan people of southeastern Louisiana **2** : a member of the Washa people

wash-abil-i-ty \ˌwȯshə'bilad-ē, ˌwäsh-, ˌwȯish-\ *n* : the quality or state of being washable

¹wash-able \'wȯshabal, 'wäsh-, 'wȯish-, ÷ 'wȯrsh- *or* 'wärsh-\ *adj* **1** : capable of being washed without suffering damage or loss of color ⟨a ~ dress⟩ **2** : soluble in water ⟨~ ointment bases —*Amer. Druggist*⟩ ⟨~ ink⟩

²washable \"\ *n -s* : a fabric or garment that may be washed without injury or change

wash and wear *adj* : of, relating to, or constituting a fabric or garment not needing to be ironed after washing

washaway \'wȯshəˌwā\ *n -s* [fr. the phrase *wash away*, fr. *¹wash* + *away*] *Brit* : WASHOUT

wash ball *n* : a ball of toilet soap

wash barrel *n* : a barrel in which split mackerel are washed with salt water to extract the blood before salting

washbasin \'wȯshˌbāsᵊn\ *n* : WASHBOWL

washboard \'wȯshˌbōrd\ *n, often attrib* **1** : a broad thin plank fixed along a gunwale or set on the sill of a lower deck port to keep out the sea — called also *washstrake, wasteboard* **2** : BASEBOARD **3 a** : a corrugated rectangular surface (as of zinc or glass) in a wooden frame on which clothes are rubbed in washing **b** : a road or pavement so worn by traffic as to be corrugated transversely **c** : a corrugated surface (as of glass or wood)

washboard 3a

washboiler \'wȯshˌbȯilər\ *n* : a large metal vessel used for boiling clothes

wash boring *n* : a boring system by which material loosened by a bit is borne to the surface in the annular space between the bit and casing by water forced down through the pipe bearing the bit

wash bottle *n* : a bottle or flask provided with one bent tube passing through the stopper for directing a stream of water on anything to be washed or rinsed and with means for forcing (as by blowing into a second tube passing through the stopper or by squeezing if the bottle is flexible) the water through the tube

washbowl \'wȯshˌbōl\ *n* : a large bowl for water to wash one's hands and face — called also *washbasin*

wash-brew \'wȯshˌbrü, 'wäsh-\ *n, dial Eng* : oatmeal boiled until gelatinous : FLUMMERY 1a

wash brush *n* : a large brush for applying a wash

wash bulkhead *n* : a bulkhead in a ballast tank to prevent excessive movement of liquid in the tank

washcloth \'wȯshˌklȯth\ *n* : a cloth used for washing one's face and body

wash-colored \'wȯshˌkələrd\ *adj* : colored as if with a wash or water-color

washday \'wȯshˌdā\ *n* : a day regularly set aside (as once a week) for washing clothes (as of a family or institution) ⟨on the evening of the second ~ —Flora Thompson⟩

wash dirt *n* : earth washed or to be washed for gold : WASHING STUFF

wash-dish \'wȯshˌdish, *in sense 2* 'wäsh-, *or* 'wäsh-\ *n* **1** : WASHBOWL **2** [so called fr. the motion of its tail resembling the motion of one washing dishes] *dial Eng* : PIED WAGTAIL

wash down *vt* **1** : to move or carry downward by action of water or other liquid; *specif* : to facilitate the passage of (food) down the gullet with accompanying swallows of liquid ⟨bolted a hot dog and *washed it down* with soda⟩ **2** : to wash the whole length or extent of ⟨*washed down* and scrubbed out with disinfectant, making sure that no corners or grooves ... are missed out —Henry Wynmalen⟩

washdown \'wȯshˌdaun\ *adj* [*wash down*] : constructed with provision for washing contents downward ⟨a ~ water closet⟩

wash drawing *n* : water-color painting in or chiefly in washes esp. in black, white, and gray tones only

washed *past of* WASH

washed-curd cheese \'wȯshtˌkərd-\ *n* [*washed*, past part. of *¹wash*] : cheddar cheese in which the curd is washed before being pressed into forms to remove a portion of the whey, lactose, and soluble milk salts and produce a soft body with open texture

washed metal *n* : iron treated so as to remove most of the silicon and phosphorus and not too much of the carbon

washed-out \'wȯshtˌaut\ *adj* [fr. past part. of *wash out*] **1 a** : faded in color : lacking in brightness or vividness ⟨a very pale, *washed-out* blue —Eden Phillpotts⟩ **b** *of a photographic print* : lacking detail in highlights **2** : depleted in vigor or animation : played out : EXHAUSTED ⟨worked from seven in the morning until noon, and I was limp, *washed-out* —Richard Wright⟩ **3** : ERODED ⟨coal workings line the route in this hilly, *washed-out* section —*Amer. Guide Series: Pa.*⟩

washed sale *n* : WASH SALE

washed-up \'wȯshtˌəp\ *adj* [fr. past part. of *wash up*] **1** : ready for the discard : done for : played out ⟨as far as he's concerned, you're a *washed-up* nobody —Albert Morgan⟩ **2** *usu* **washed up** : at the end of an association or activity : ready to call it quits : THROUGH ⟨he was completely *washed up* with his wife ... he never visited her —Morton Faber⟩ ⟨I'm *washed up* with the rackets —Allan Bruce⟩

washen *archaic past part of* WASH

¹wash-er \'wȯshə(r), 'wäsh-, 'wȯish-, ÷ 'wȯrsh- *or* 'wärsh-\ *n -s* [ME *wassher*, fr. *washen* to wash + *-er*] **1 a** : a person who cleans by washing (as clothes, animals, or materials or products in processes of preparation, manufacture, or maintenance) **b** : a machine for washing something; as (1) : a device for removing dirt and soluble impurities from pulp and paper stock (2) : WASHING MACHINE (3) : an apparatus or device for washing photographic materials to remove soluble chemical products (as produced by development or fixing) (4) : an apparatus in which gases are washed : SCRUBBER **c** ⟨rotary ~s⟩ **2** [ME; fr. the motion of its tail resembling the motion of one washing clothes or dishes] *dial Eng* : PIED WAGTAIL **3** : any of various flat thin rings or perforated plates (as of metal or leather) used in joints or assemblies to insure tightness, prevent leakage, or relieve friction — see LOCK WASHER, SPRING WASHER **4** [so called fr. its habit of washing its food before eating] : RACCOON

wash gravel *n* : gravel washed to extract gold

wash-hand \'wȯshˌand\ *adj, Brit* : designed for use in washing the hands or for holding ut... for such purpose ⟨a *wash-hand* basin⟩ ⟨a *wash-hand* sta...

washhouse \'wȯshˌhau̇s\ *n* : a ... or building used or equipped for washing; *esp* : one for ...ing clothes : LAUNDRY

washier *comparative of* WASHY

washiest *superlative of* WASHY

washin \'wȯshən\ *n -s* [*¹wash* (flow, stream) + *in*] : a permanent twist or warp of an airplane wing such that the tip section has a larger angle of attack than the root section

wash-i-ness \'wȯshēnəs, 'wäsh-, 'wȯish-\ *n -ES* : the quality or state of being washy

washing *n -s* [ME *wasching*, fr. gerund of *waschen* to wash] **1** : the act or action of one that cleanses with water ⟨gave himself a good ~⟩ ⟨gave the clothes a thorough ~⟩ **2 washings** *pl* **a** : liquid that has been used to wash something **b** (1) : metal (as gold dust) obtained by washing (2) : a place or soil yielding metal or gems under washing **c** : material collected by the washing of a bodily cavity ⟨sinus ~s⟩ ⟨throat ~s⟩ **3 a** : the action of waves or running water : the erosion or removal of material by running water **b washings** *pl* : material abraded or transported by the action of water **4 a** : the operation of bathing, drenching, or coating with a liquid (as in mining ore) **b** : the act or process of applying a thin coat of paint (as watercolor) **c** : the dipping of fruits (as apples, pears, or plums) in a dilute solution of hydrochloric acid followed by rinsing in water as a means of removing spray residues that might be toxic to humans **5** : a thin covering or coat ⟨a ~ of silver⟩ **6** : clothes or other articles washed or to be washed esp. at one time : WASH ⟨the ~ was hanging in the back garden —J.I. Jones⟩ **7** : the execution of a wash sale

washing bottle *n* **1** : WASH BOTTLE **2** : a bottle for use in washing gases by passing them through liquid contained in it

washing engine *n* : a device much like a beater in which rags are washed by a stream of water and also reduced to threads and fibers

washing machine *n* : a machine for washing; *specif* : a usu. power-driven machine for washing clothes and household linen

washing powder *n* : a powder for washing (as a soap powder or a powder containing a synthetic detergent and alkaline builder)

washing soda *n* : SODIUM CARBONATE a(3)

washing stuff *n* : an earthy deposit containing gold that may be extracted by washing

wash-ing-ton \'wȯshiŋtən, 'wäsh-, 'wȯish-, -shēn- *sometimes* -shənt-, ÷ 'wȯrsh- *or* 'wärsh-\ *adj, usu cap* **1** [fr. *Washington*, capital city of U.S., after George *Washington* †1799 first president of the U.S.] : of or from the city of Washington, D.C. ⟨a *Washington* legislator⟩ : of the kind or style prevalent in Washington : WASHINGTONIAN **2** *or* **washington state** *usu cap W & often cap S* [fr. *Washington*, northwestern state of U.S., after George *Washington* †1799] : of or from the state of Washington ⟨*Washington* apples⟩ : of the kind or style prevalent in Washington : WASHINGTONIAN

washington clam *n, usu cap W* : a butter clam (*Saxidomus nuttalli*)

washington grass *n, usu cap W & often cap G* : a water shield (*Cabomba caroliniana*)

washington handpress *n, usu cap W* [after George *Washington* †1799] : a hand-operated printing press perfected about 1829

¹wash-ing-to-nia \ˌ=='tōnēə\ *n, cap* [NL, fr. George *Washington* †1799 + NL *-ia*] : a genus of massive fan palms of California and adjacent Mexico having large plicate leaves cut nearly to the middle and often bearing filaments on their margins and a smooth trunk bearing a large shaggy mass of persistent dead leaf remains

²washingtonia \"\ [NL, fr. George *Washington* †1799 + NL *-ia*] *syn of* OSMORHIZA

³washingtonia \"\ [NL, fr. George *Washington* †1799 + NL *-ia*] *syn of* SEQUOIA

¹wash-ing-to-ni-an \ˌ=='tōnēən\ *adj, usu cap* **1** [George *Washington* †1799 first president of the United States + E *-an*] : of, relating to, or characteristic of George Washington **2** [*Washington*, capital city of U.S.A., or northwestern state of U.S.A. + E *-an*] **a** : of, relating to, or characteristic of Washington, D.C., or the state of Washington **b** : of, relating to, or characteristic of the people of Washington, D.C., or the state of Washington

²washingtonian \"\ *n -s* **1** *cap* : a native or resident of Washington, D.C., or the state of Washington **2** *usu cap* [*Washington* Temperance Society, founded 1840 + E *-an*] : a member of the Washington Temperance Society

wash-ing-to-ni-ana \ˌ=='tōnē'anə, -'ānə, -'ánə *also* -'ānə\ *n pl, usu cap* [George *Washington* †1799 + E *-ana*] : material (as papers, books, letters, or relics) relating to George Washington

washington lily *n, usu cap W* : a large white-flowered lily (*Lilium washingtonianum*) of the Pacific coast of the U.S. that is widely cultivated for ornament

washington palm *n, usu cap W* : a large fan palm (*Washingtonia filifera*) with many slender filaments hanging from its leaf margins — called also *California fan palm*

washington pie *n, usu cap W* [after George *Washington* †1799] : cake layers put together with a jam or jelly filling

washington plant *n, usu cap W* : FANWORT

washington post *n, usu cap W&P* : an American ballroom dance of the end of the 19th century

washington's birthday *n, usu cap W&B* [after George *Washington* †1799 first president of the United States] **1** : February 22 formerly observed as a legal holiday in most of the states of the U.S. **2** : the third Monday in February observed as a legal holiday in most states of the U.S. — called also *Presidents' Day*

washington thorn *n, usu cap W* [fr. *Washington*, D.C., capital city of the U.S.] : a hawthorn (*Crataegus phaenopyrum*) of eastern No. America that is often cultivated for its bright-red fruit and showy autumn foliage

wash-i-ta \'wäsh,ətō\ *adj, usu cap* [fr. Fort *Washita*, Texas] : of or relating to a subdivision of the Comanchean — see GEOLOGIC TIME table

washita stone *n* [fr. *Washita* (*Ouachita*) river, southwest Arkansas] : a porous variety of novaculite used esp. for sharpening woodworking tools

washland \'wȯshˌland\ *n* : land or a stretch of land washed periodically by an overflowing stream

washleather \'wȯshˌleth·ər\ *n* **1** : a soft leather usu. made of split sheepskin dressed with oil in imitation of chamois **2** *chiefly Brit* : a piece of washleather or soft cloth used for dusting or cleaning : CHAMOIS ⟨was flicking over the radiator with a ~ —Nicholas Monsarrat⟩

wash-man \'wȯshmən\ *n, pl* **washmen** **1 a** : a man who washes clothes **b** : a textile worker who scours cloth during manufacturing **2** : a man who applies wash (as in tinplate making)

wash mill *n* : any of several machines for washing clay, hides, or materials for cement

(this fabric is *washed out*) **b** : ... : EXHAUST ⟨after his recent illne... being⟩ **c** : to cancel out : OFF... of government reduction of its d... posits —T.O.Waage⟩ **d** : to eli... tory : DISCARD, REJECT; *specif* : ... date) as failing to qualify **3 a** : ... the force or action of water ⟨th... ⟨the heavy rains *washed out* the r... game of the doubleheader was ... pour⟩ ~ *vi* **1** : to become dep... ⟨technicolor makeup ... *was...* **2** : to fail to meet requirements ... *specif* : to fail in a course of train... **3** : WASH 2a

washout \'wȯshˌaut\ *n -s* [*wash out*] : ... in one sedimentary deposit and ... younger deposit **b** : the washin... the bed of a road or railroad by ... where the earth is washed awa... after the storm⟩ **c** : WASH 3d ... ing or flushing out a container ... vice for such process **3 a** : one ... pectations or requirements : a ... first really hopeful idea he had r... Crofts⟩ ⟨the failures, the drunk... away from themselves —Hugh M... **b** : a person (as a flying cadet or ... failed out of a course of training ... failing (as in a course of trainin... twist or warp of an airplane win... a smaller angle of attack than t... gency signal given by hand or l...

wash plain *n* : ALLUVIAL PLAIN

wash plate *n* : any of several pla... prevent surging of bilge water wh... ing : BAFFLE

wash port *n* : FREEING PORT

washpot \'wȯshˌpät\ *n* : a pot for was... used outdoors for boiling cloth... out there in the yard ... around... B. Gipson⟩ **b** : a pot containi... plates are dipped to be coated i...

wash primer *n* : a primer of low n... adhesive and protective properti...

washrack \'wȯshˌrak\ *n* : WASHSTAND

washrag \'wȯshˌrag\ *n* : a piece of ... : WASHCLOTH

washroom \'wȯshˌrüm, -ˌru̇m\ *n* **1** : a room ... building) equipped with washin... TORY 3a **2** : a room in a dyeh... washed

wash sale *n* : a prearranged fictit... real change of ownership that is ... or to establish a loss for tax pur...

washstand \'wȯshˌstand\ *n* **1 a** : a piec... tures of a table and cupboard a... pitcher, basin, or towel) for wash... washbowl (as of porcelain) perm... wall) and attached to water and ... a garage) having water and drain... of vehicles

washstrake \'wȯshˌstrāk\ *n -s* : WASHBO...

wash-tail \'wȯshˌ-, 'wäsh,-\ *n* [... motion of its tail] *dial Eng* : PIE...

washtray \'wȯshˌtrā\ *n* : LAUNDRY TR...

washtrough \'wȯshˌtrȯf\ *n* : a troug... : BUDDLE

washtub \'wȯshˌtəb\ *n* : a tub in whic... washed

wash up *vi* **1** : to wash one's face ... the dishes after a meal ⟨went strai... was *washing up* —D.H.Lawrence ... washing ⟨*wash up* the spilled milk ... we've *washed up* that subject —P... *washed* him *up* as a heavyweight...

washup \'wȯshˌəp\ *n -s* [*wash up*] **1 a** ... ing clean ⟨thorough ~s, sterilizati... *periment Station Record*⟩ ⟨presse... product would be lousy beyond... **b** : the act or process of washing

wash-way \'wȯshˌ-, 'wäsh,-\ *n, dia...* covered by running water

washwheel \'wȯshˌ\ *n* : a smooth or... which clothes or other fabrics are...

washwoman \'wȯshˌwu̇mən\ *n, pl* **washw...**

washwork \'wȯshˌwərk\ *n* : WASH DRAW...

washy \'wȯshē, 'wäsh-, 'wȯish-, ... *adj* -ER/-EST [*²wash* + *-y*] **1 a** ... : WATERY ⟨they ... on the ~ ooz... Milton⟩ **b** : easily eroding or wash... ⟨a ~ hillside⟩ **2 a** : lacking in sub... THIN, WATERY ⟨~ tea⟩ **b** : deficie... of color : PALLID ⟨these strong ear... of the cherry blossoms ... and l... —Anthony West⟩ ⟨a ~ pink or r... —E.H.M.Cox⟩ **c** : lacking in vig... ness ⟨keeping one foot in a sort of ... Mackenzie⟩ **3** *obs* : lacking in m... character : FRIVOLOUS, LOOSE **4 a** ... ing in condition and in firmness of ... scour or sweat profusely on sligh... horse⟩ **b** : tending to produce fl... mals ⟨~ grass⟩ ⟨~ feed⟩

was-n't \'wəzᵊnt\ (t), 'wäz- *also* 'wȯz... *dial* 'wänt \ [by contr.] : was not

¹wasp \'wäsp, 'wȯsp\ *n -s* [ME *was...* akin to OHG *wafsa*, *wefsa* wasp, L *vapsa* gadfly, L *vespa* wasp, ... *wefan* to weave — more at WEA...] **1 a** : any of numerous winged ... menopterous insects that genera... have a slender smooth body with ... abdomen attached by a narrow sta... well-developed wings, biting mou... parts, and in the females and work... a more or less formidable sting, t... belong to many different families a... include forms of social as well as ... solitary habits, and that are larg... carnivorous and often provision th... nests with caterpillars, insects, ... spiders killed or paralyzed by sting... on — compare SPHECOIDEA, VESPO... NET, YELLOW JACKET; BEE **b** : any ... insects (as a chalcid fly or ichneum... are parasitic esp. on other insect lar... **b** : something that stings or infuria...

²wasp \"\ *n -s usu cap* [*Women's A...*